



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

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(21) International Application Number: PCT/TR00/00017 (22) International Filing Date: 20 March 2000 (20.03.00) (30) Priority Data: U 99/00612 19 March 1999 (19.03.99) TR U 00/00743 20 March 2000 (20.03.00) TR (71)(72) Applicant and Inventor: MERIC, Falk, Levent [TR/TR]; 4, cad. No. 31, Büyük Sanyi-Ankara (TR).		(81) Designated States: US, Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>
(54) Title: SMOKELESS GRILL (57) Abstract An electric grill having quartz heating tubes operating at bright red temperatures are positioned above the foodstuff. A water reservoir exists below the food to receive the drippings. Vapours formed during cooking exits through a hot zone, where the odor is de-characterized.		

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DESCRIPTION

Smokless grill

RELATION and EXISTING SITUATION

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Usually, it is very difficult to avoid fumes while grilling on charcoal or with heating elements placed below. Obviously, burning of drippings onto the hot surfaces is the cause of fumes. Also, it is believed that these fumes are un-healthy due to their nitrate content. Consequently, indoor grilling is not very much possible.

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Cleaning the material contacting the food while grilling is another problem due to the burning and carbonized food on hot parts. Besides, vapours driven out contaminates the environment with unpleasant odors.

EXPLANATION OF INVENTION AND BENEFITS

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Food is placed on a perforated plane (fig's 1,2,3,5 item 5) in an oven pan (item 4) containing water at the bottom. Drippings go directly into the cold water thus no fumes are formed. Grilling action is done by red hot quartz electric heating rods (item 3) which are under a reflector plate (item 2) giving intense radiative heat energy which does the grilling action properly.

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Grilling usually causes some undesirable odors. To avoid these undesirable odors and fumes, cooking pan is placed in vapour tight vessel.(fig 4,5) Inside channeling of the vessel is designed in a way that (C fig 4) vapours find their way out (3 @ fig 4) through a hot zone.(2 of fig 4) . Odor causing organic molecules change their structure at hot region. This structural alteration eliminates the characteristic recognition of the odor.

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The unit can (or will) be produced in two versions.

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- i. smokless and economic model with various versions (fig's 1&2) and (fig.3) with warm keeping zone .

pan with inside material placed underneath the heating bars at a certain distance at no vapour tight configuration. Surface of the pan is open to environment.

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ii. smokless and odorless model

same as above, but pan is inside a closed chamber (1 @ fig's 4&5) and the vapour can exit (3) only through a hot zone.(2@Fig 4) Formation of this zone can be (and will be) done either by flame (5@ fig.4 B) or by electric alternatively.(6@ fig. 4C)

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Flame can be formed by various fuels (solid, liquid or gas) . (4@ fig.4 B)

Quartz heating tubes (3@fig.4)already operating at those molecular destruction temperatures serve for this purpose. To achieve this result inner vapour passing path is tailored accordingly. (fig. 4 C)

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Different grilling versions such as slotted pan for placing meat carrying sticks, or turning attachment for gyro meat are also included in the idea.

OPERATION

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Food is placed onto the perforated plate having water underneath. Pan is placed under the heating elements and energised. Both sides of the food will be grilled in turn.

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APPLICATION

Will be produced for commercial purposes . Various models for house use as well as for professional kitchens.

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CLAIMS

An electric grill composed of standard material (housing, electric control unit, cables etc) and quartz heating tubes placed above the food and water below .

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Additionally, cooking chamber is vapour tight and this space is vented via a hot zone developed by flame or electric.

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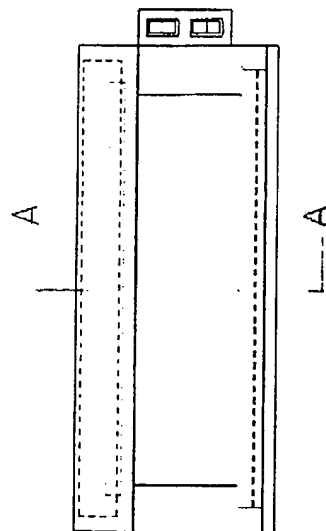
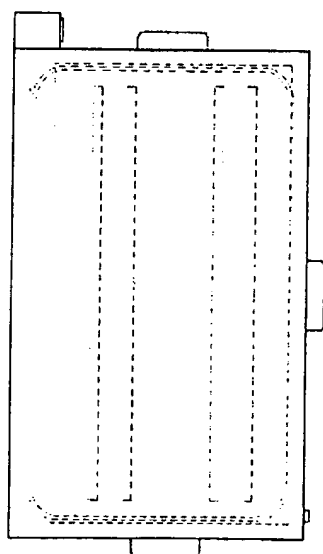
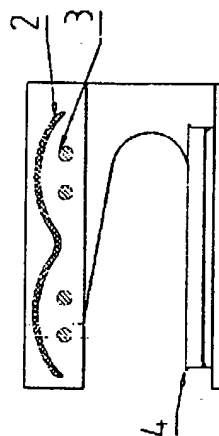
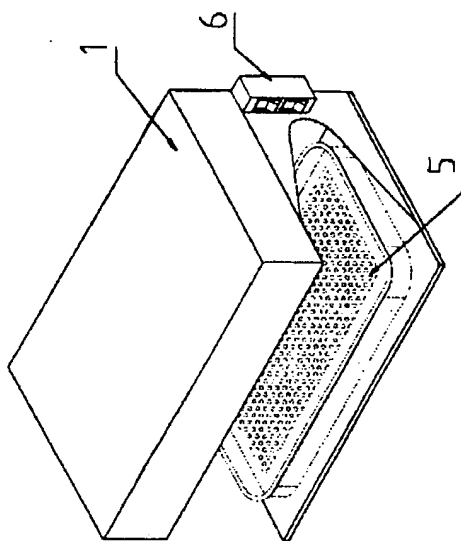
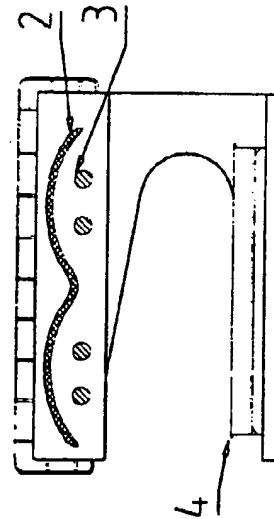
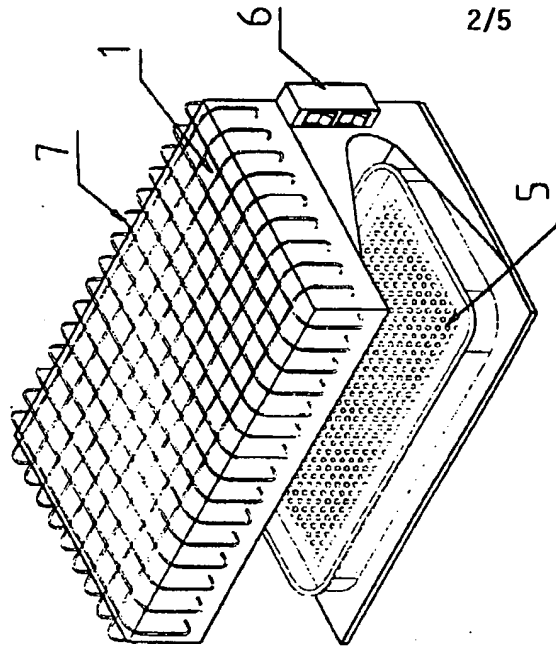


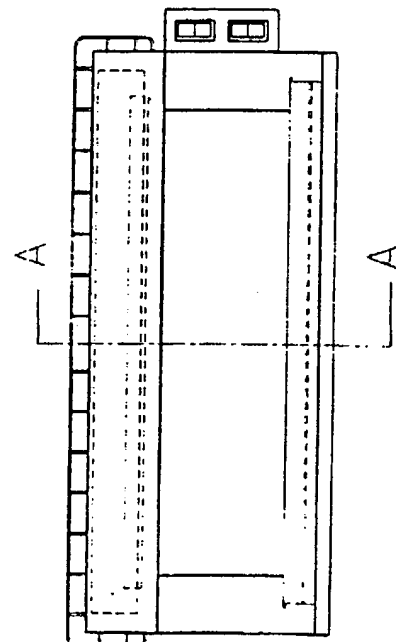
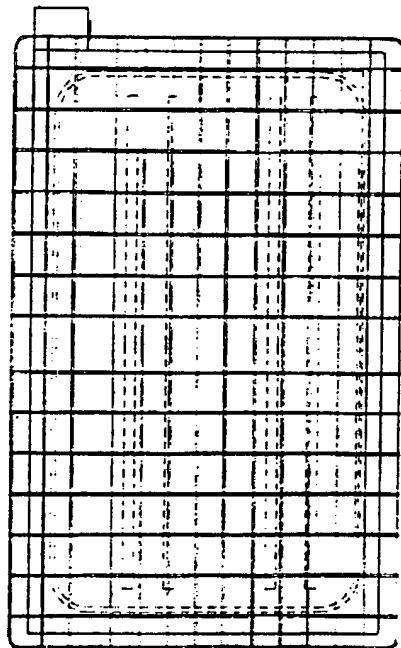
FIGURE -1

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A - A

FIGURE - 2



3/5

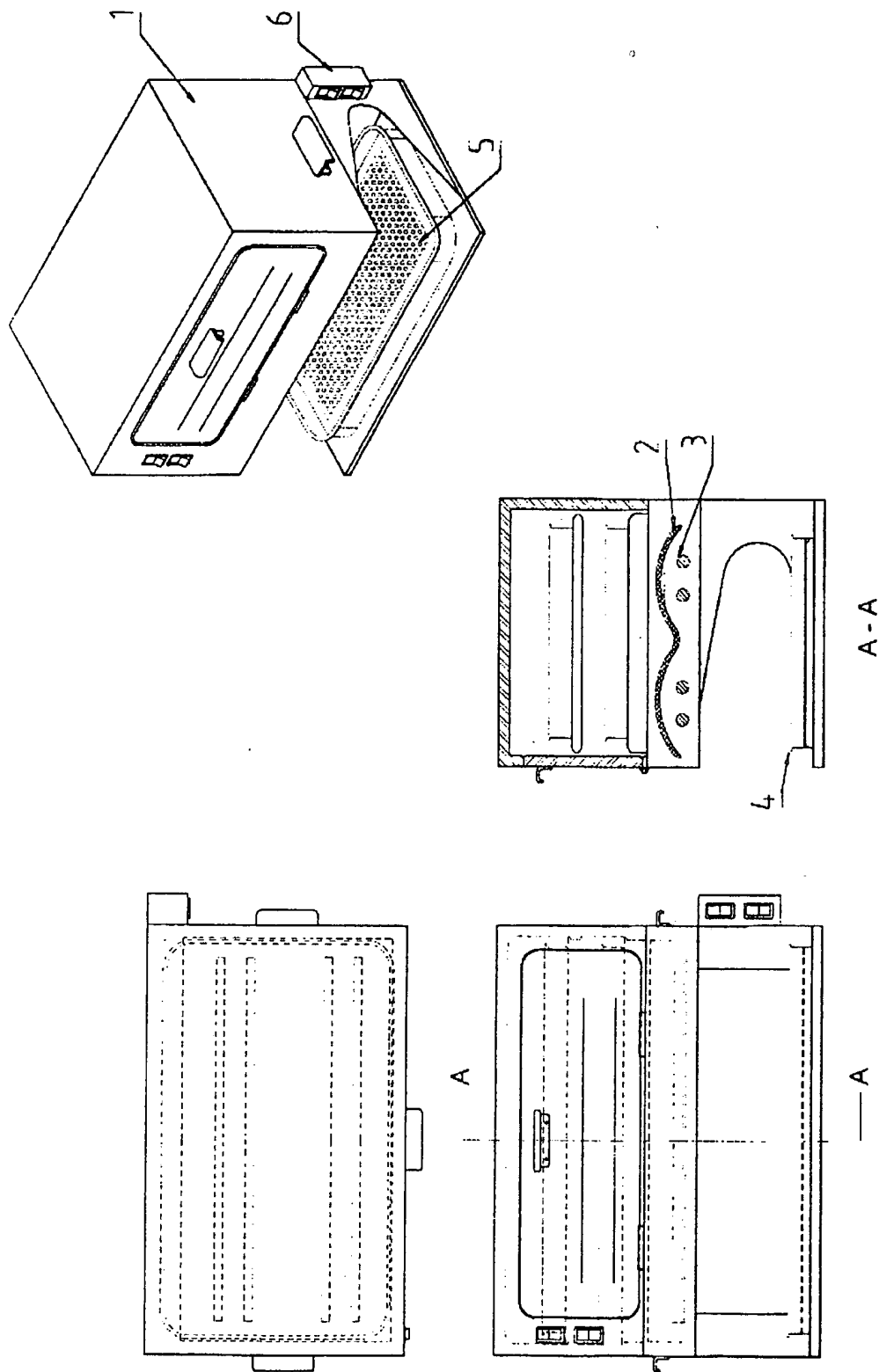
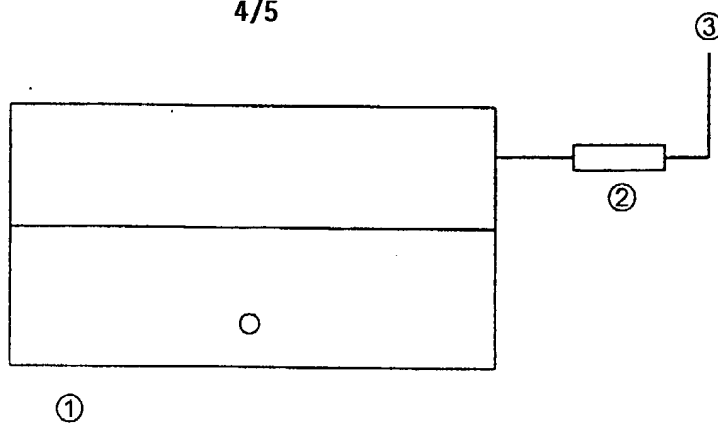


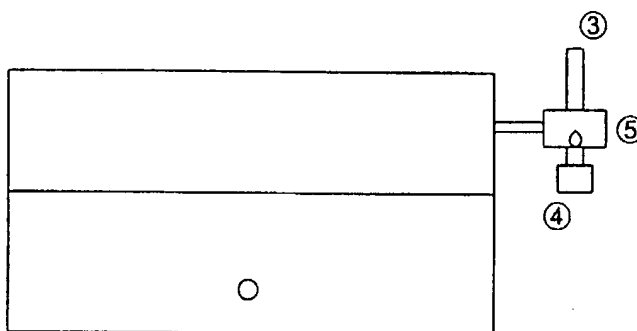
FIGURE -3

4/5

A



B



C

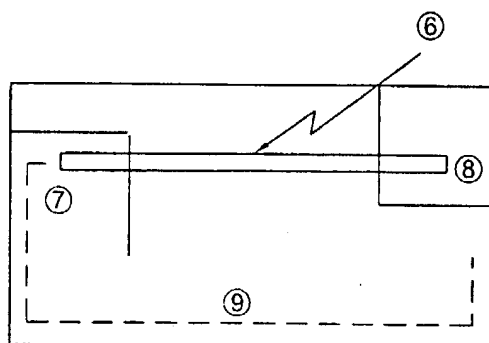


FIGURE - 4

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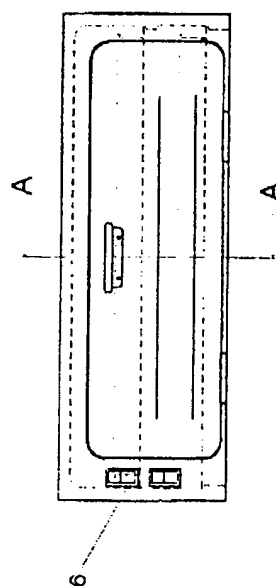
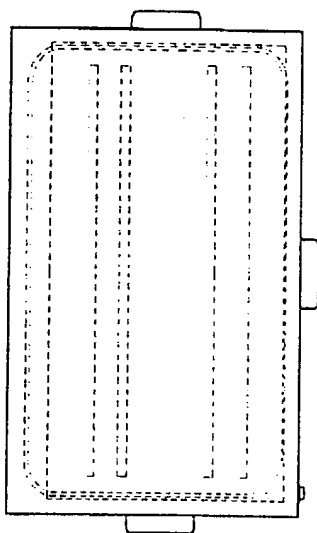
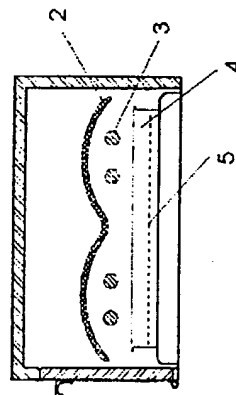
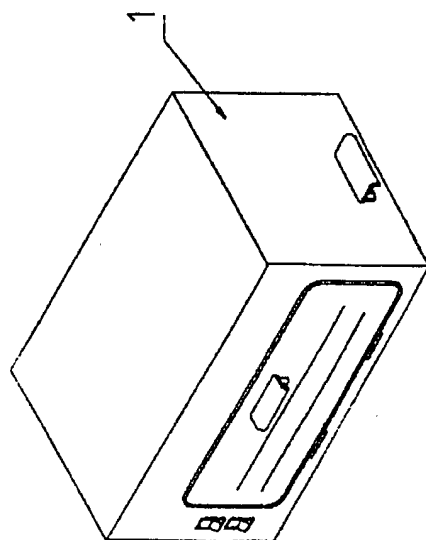


FIGURE -5

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/TR 00/00017

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INTERNATIONAL SEARCH REPORT

International application No.
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CLASSIFICATION OF SUBJECT MATTER

IPC⁷: A 47 J 37/06, 37/00

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC⁷: A 47 J

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EPODOC, PAJ, WPI

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2491317 A1 (TRAVIN SA) 9 April 1982 (09.04.82) fig.2; claims	1
A	BE 892776 A (WERKHUIZEN RUBBENS) 2 August 1982 (02.08.82) totality	1
A	US 5504295 A (COLLAS et al.) 2 April 1996 (02.04.96) totality	1
A	FR 2670274 A1 (SEB. S.A.) 12 June 1992 (12.06.92) fig. 1; abstract	1

☐ Further documents are listed in the continuation of Box C.
 ☒ See patent family annex.

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Date of the actual completion of the international search

18 August 2000 (18.08.2000)

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